

Amendment

Applicant: Steven Paul Randall

Serial No.: 10/691,828

Filed: October 23, 2003

Docket No.: K315.132.101

Title: ELECTRO-MECHANICAL TRANSMISSION SYSTEMS

REMARKS

Claims 1-13 and 17-26 are pending. By this Amendment, claims 7, 13, 17-18 and 21-23 are amended, claims 14-16 are cancelled, and new claims 24-26 are added. The specification is amended and new Figures 3A-3B are added.

Drawings

The May 31, 2005 Office Action objected to the drawings under 37 C.F.R. § 1.83(a). Attention is directed to new Figures 3A-3B and a corresponding addition to the specification beginning at page 14, after line 2, illustrating and describing mechanical brake 80, third electrical machine 86, and sensor 94. New Figures 3A-3B and the corresponding addition to the specification contain no new matter, support being provided in the originally filed application at e.g. page 9, lines 8-13 and the originally filed claims.

Regarding the means for monitoring and means for extracting power noted in the objection to the drawings, the structure associated with these functions is already represented in Figure 1, for example at 56, 58 and 62. Note page 14 of the originally filed specification, lines 6-8, for example.

Applicant submits that the drawings satisfy 37 C.F.R. § 1.83(a).

Claim Objections

The Office Action objected to claims 22-23, indicating that “the said” should be changed to --said--. By this Amendment, claims 22-23 are amended accordingly, for reasons of clarity and not for reasons related to patentability. Applicant submits that the claim objections are overcome.

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Prior Art Rejections

The Office Action rejected claims 1-2 and 21-22 under 35 U.S.C. § 102(b) over Bowen (U.S. Patent No. 6,371,878) and claims 3-4 and 6 under 35 U.S.C. § 103(a) over Bowen in view of Anthony (U.S. Patent No. 6,405,818). Applicant respectfully traverses these rejections.

Independent claim 1, lines 7-9, recite a controller operable to direct at least a proportion of electrical power from one of the machines to the energy receiver *to increase the torque applied to the output shaft*. Claim 21, line 9 and claim 22, lines 8-9 also recite an increase of torque applied to the output shaft. Bowen fails to teach or suggest these features.

Regarding claim 1, Bowen has no teaching whatsoever of the benefit of directing at least a proportion of electrical power from one of the claimed machines to an energy receiver to increase torque applied to the output shaft. Bowen's column 3, lines 14-31, referenced in the Office Action, state that Bowen can use a first electrical motor/generator in tandem with a second electrical motor/generator to provide power recirculation. This concept is well known in the art. Bowen's disclosure is merely a passing reference to what is a standard procedure. If Bowen has enough power, Bowen can recirculate power through another motor/generator and/or store it in a battery. This is simply a teaching of one way of handling power internally, without any reference whatsoever to system output, for example, the claimed increased torque applied to the output shaft.

Recirculating energy is not the purpose of the invention as claimed. As claim 1 recites, at least a proportion of electrical power is directed from one of the electrical machines to an energy receiver, "to increase the torque applied to the output shaft." There is absolutely no teaching or

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suggestion of this feature whatsoever in Bowen, because dumping energy to increase torque is counter-intuitive to Bowen. Embodiments of the present invention disclose a dump for dissipating energy, whereas Bowen recirculates energy using a second motor/generator or battery. Bowen does not direct at least a proportion of energy to increase torque, as recited in claim 1, use a mechanical brake to brake at least one of the electrical machines to increase torque, as recited in claim 21, or control flow of electrical power between the recited machines and a third electrical machine to increase torque, as recited in independent claim 22.

Turning to Anthony, Applicant submits that Anthony and Bowen are not properly combinable to meet the features of the claimed invention. Anthony does not disclose any of the mechanical features of the first and second machines of the claimed invention. Instead, Anthony is concerned with operation of a hybrid vehicle under fault conditions, which is irrelevant to the present invention. It is also equally irrelevant to Bowen and therefore not combinable with Bowen. Additionally, the fact that Anthony uses signal levels to determine control actions is irrelevant to the invention recited in e.g. dependent claims 3-4 and 6. Finally, Applicant submits that it is unreasonable and against the teaching of Bowen to describe Bowen's carrier as an energy receiver.

In view of the foregoing, Applicant submits that independent claims 1, 21 and 22, and their dependent claims, define patentable subject matter.

New Dependent Claims

Attention is directed to new dependent claims 24-26, which recite that the claimed controller is operable to extract power from the claimed transmission system to increase the

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torque applied to the output shaft. Nothing in Bowen, Anthony or the other prior art teaches or suggests this feature. Accordingly, Applicant submits that new dependent claims 24-26 define patentable subject matter.

Attention is directed to the newly added similar language recited in independent method claims 7, 13 and 17-18 and the language in independent claim 19, lines 9-10. Applicant submits that the feature of extracting power to increase torque is clearly allowable over the prior art of record, and respectfully requests that these non-elected claims be considered and allowed.

Conclusion

In view of the foregoing, Applicant submits that this application is in condition for allowance. Favorable reconsideration and prompt allowance are requested. The Commissioner is hereby authorized to grant any extensions of time and to charge any fees under 37 C.F.R. § 1.16 and § 1.17 that may be required during the entire pendency of this application, or to credit any overpayment, to Deposit Account No. 500471.

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The Examiner is invited to telephone the undersigned to advance prosecution.

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Respectfully submitted,

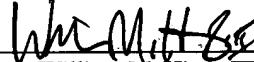


William M. Hienz III
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Please grant any extension of time necessary for entry; charge any fee due to Deposit Account No. 500471.

CERTIFICATE UNDER 37 C.F.R. 1.8:

The undersigned hereby certifies that this paper or papers, as described herein, are being deposited in the United States Postal Service, as first class mail with sufficient postage, in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22318-1450 on this 30th day of September, 2005.

By 

Name: William M. Hienz III

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Amendments to the Drawings:

The attached sheet of drawings adds new Figures 3A and 3B.

Attachment: New Drawing Sheet